

GA FEEDBACK

No: 17

September 2003

ACCESS TO CLASS D AIRSPACE

[NOTE: Class D Airspace is that airspace within those Control Zones/Areas listed in the Aeronautical Information Publication (AIP) ENR 1.4 Para 2.4.1 during the notified hours of watch of the appropriate ATC Unit.]

In recent years there has been a perception among some GA pilots that access to some Class D Airspace has become more difficult; this led to the Directorate of Airspace Policy sponsoring an investigation into the situations at Luton and Stansted.

The General Aviation Safety Council and the Aircraft Owners and Pilots Association recently announced an initiative to seek information on all other areas of Class D Airspace. CHIRP has agreed to accept confidential reports on this topic. Reports are disidentified and forwarded to the GASCo/AOPA nominated representative. Reporters' details remain confidential to CHIRP and are retained only for a short period to permit as much information to be gained as possible.

This is an opportunity to gain important information on this subject. A copy of the Class D Report form is enclosed. Also, forms are available on the CHIRP website and in several GA magazines. The following are examples of reports received to date:

(1)

This is one of four examples at AAA of obstruction to encourage private aircraft to "go away". At times when the airport was not particularly busy I have had to orbit or take a circuitous route. On this occasion I had to orbit four times to cross the zone. An overhead routing would not have caused a problem but was not offered. The result is that I avoid the airspace, thus the number of requests for access decline, as others follow my course of action. The adverse spin off is the number of aircraft passing through or close by an adjacent busy GA airfield.

(2)

I operate a hot air balloon under business flying between two Control Zones. Access to AAA Class D airspace is usually always permitted but in the recent past a call for permission to enter BBB Class D airspace is met by the response - "Remain clear of controlled airspace". This is before a request is made. At one time we were allowed to land within the zone.

PROPELLER SWINGING

The hazards of swinging a propeller are obvious, and yet in spite of the inherent danger, accidents continue to occur. Recently we have received a number of reports of near accidents involving hand swinging.

Hopefully the following will provide food for thought:

(1) AN EXPERIENCED 'SWINGER'

I have been flying since 1975. The Condors that I learned on almost invariably had defective starter clutches and needed a hand-swing.

I have therefore been a 'swinger' for many years, and have swung everything from an Aztec to a Sukhoi.

During this time I have never once swung a prop without anybody in the cockpit.

Recently, I bought a vintage Gipsy-powered 2-seat tandem open cockpit aircraft. It is fitted with brakes. The switches are internal (i.e. not on the outside of the cockpits as on the Tiger Moth).

I have had prop-swinging incidents during my early ownership of this aircraft (my first 'handraulic' machine) - which could have had disastrous consequences.

Incident 1 - With a 30-year experience pilot (including Tiger Moths) passenger in the front cockpit I decided to switch the rear switches on before 'sucking in'.

I called 'Brakes on, throttle closed, switches off' - ensuring that I got the same response back - and proceeded to pull the prop through.

After a couple of pulls the engine suddenly backfired, giving me a painful rap across the back of the hand.

The pilot had got confused with 'up for on' and had switched them on instead of merely ensuring that they were off..

Solution - Even with a pilot in the cockpit, I believe that the swinger should make it clear that 'thumbs up' (as well as the verbal command) means 'switches up/on'. I also believe that a variation from the phrase 'switches on/off' to 'switches up/down' (together with a confirmatory thumb signal) will reduce the risk of human error.

A General Aviation Safety Newsletter

from the Confidential Human Factors Incident Reporting Programme

CHIRP, FREEPOST (G13439), Building Y20E, Room G15, Cody Technology Park, Ively Road, Farnborough GU14 0BR Free(0ne):(24 hrs) 0800 214645 Fax 01252 394290

Confidential@chirp.co.uk - visit our website at www.chirp.co.uk

I also recommend that the switches in the 'empty' cockpit are left down until after the engine has been primed.

Incident 2 - Again with an experienced pilot/passenger in the aircraft, the command 'Brakes on, throttle set, contact' was given. Despite a careful brief as to where the 'start' position on the throttle lever was the pilot/passenger had clearly set the throttle a lot higher. As the engine started, it began to race - probably to 1,800 rpm or more, overcame the brakes and began to move forward. The pilot/passenger was initially unaware of what was happening, as he was small in stature and had his head inside the cockpit looking at the controls - presumably to set the throttle to the briefed 1,000rpm. Fortunately, I was able to step out of the way of the prop and grab the wingtip, at the same time as the pilot/passenger realised what was happening and closed the throttle.

Solution - Always, always use chocks (*unless the Flight Manual recommends otherwise*).

Interestingly enough - I find that a well-briefed non-pilot is no more likely to get things wrong than somebody with a licence. I put this down to a much more thorough briefing in the case of the non-pilot, especially on the operation of the switches. Safety surely then dictates that you give the same thorough briefing regardless of experience. Better to risk causing offence to a pilot than have an accident if he is having an off-day.

(2) - ENGINE STARTING PROCEDURE

As the winter progressed, the engine became more reluctant to start and reached a point where hand propping was required. On the day in question, a crisp, clear, winter afternoon, several battery starts were attempted to no avail. I disembarked my passenger due to the cold, after switching the electrics off, with the idea of turning over the engine by hand to free it up and get rid of excess fuel from over-priming. The aircraft was unchocked on a frosty apron and pointing toward the main underground fuel tanks. On the first pull-through and to my amazement the engine started but fortunately it did not move even though the parking brake was not on.

I then moved gingerly to the side and held on to the wing and called my passenger over to replace me so I could shut down. Subsequently, I saw my mistake. Although switching off the 'electrics' i.e. the 'Master switch', which I had got into my mind included the magnetos; these were selected on 'Both'.

We both retired to the clubroom for a strong cup of hot sweet tea for the shock, after which we started the process correctly.

- Aircraft on grass, better foothold
- Use of a 'prop swinger'

- Aircraft pointing away from hazards
- Parking brake on

After an un-eventful flight the aircraft was hangared and a new battery was ordered and installed.

Lessons learned:

- When 'Magnetos' are on, engine is LIVE
- When turning over an engine whether Magnetos are on or off, treat as live and act accordingly.

Like many other aspects of aviation, propeller swinging requires self-discipline and strict adherence to the recommended procedures. The onus remains with the swinger to confirm the correct switch/throttle positions before turning the propeller; a mistake could be fatal.

Chocks should always be positioned correctly to permit them to be removed safely after starting.

Although not the principal point in the second report, never attempt a flight with a flat battery, as this can lead to serious overheating of the battery and may cause a total electrical failure

Almost every year the Air Accidents Investigations Branch (AAIB) reports on accidents in which an apparently serviceable aircraft has crashed in poor weather conditions, either as a result of a loss of control or controlled flight into terrain. What are the human factors that lead to this type of accident?

The following report is an excellent, if sombre, reminder that none of us are immune:

WHAT AM I DOING HERE?

As I turned out to sea the altimeter showed 200ft. The sea and sky were the same colour grey there was no horizon and the small patch of sea I could observe through the left window looked particularly uninviting. I was just clipping the base of the stratus and had no blind flying instruments apart from a turn and slip indicator. I realised with a burst of adrenaline that here I was, a multi-thousand hour 767 Captain with nearly 40 years flying expertise, flying a limited panel rate 1 turn to save my life!

The day had started fine when I had departed from a private strip ¼ mile inland from the ### coast. I had an easy flight up country to AAA with my daughter who was going to stay with relatives. I was flying a two-seater high wing taildragger operating on a Permit to Fly. I had owned a share in the aircraft for several years and was comfortable flying it despite the minimal instrumentation.

I was aware that the weather would deteriorate from the west later in the day so I paid particular attention to the Terminal Aerodrome Forecasts (TAFs) to two airfields relatively close to the private strip. It appeared the worst I could expect at my Estimated Time of Arrival was scattered at 600ft, broken at 800ft and overcast at 1000ft. Worst visibility would be about 5k and the wind was about 12-15kts from the Southwest, with occasional drizzle.

Not very nice for a VFR flight, but I reasoned I could fly along the coast, staying VFR below and even at 600ft I could easily and safely make the strip which was visible from the shore. I had full tanks of fuel which would give me the possibility to turn back at any stage and head for one of several alternate airfields.

So what went wrong? I flew the plan but as I approached the ### Peninsula I was being forced steadily lower by the cloud base. I pressed on too long and found myself down at cliff top height and about 300m out to sea. I decided to turn back but my instinct was to turn away from the cliffs!

I then lost my visual cues. I have to thank those RAF QFI's who taught me to fly, for hammering into me the technique for flying on limited panel, as I managed to fly an accurate turn and re-establish visual contact with the coast line. It was then simplicity to follow the coast east with better weather, and then divert to BBB.

LESSONS LEARNED (OR RE-LEARNED)

1. Its much easier to fly into danger than it is to fly out of it.
2. Don't press on into deteriorating weather 'hoping' for an improvement; it's a stupid way to die.
3. Even if you have an Artificial Horizon, try practicing 180 deg turns on the turn needle/altimeter (with a lookout pilot of course), you may just need it unexpectedly one day.
4. Wear a life jacket when operating near the sea (I had not planned to fly over the sea and was not wearing one).
5. Finally don't be complacent, however much experience you have. I am still learning after 40 years of flying.

These are five good lessons learned by an experienced pilot; whether a pilot with less experience would have been able to cope in similar circumstances is open to question.

One further point is that in some meteorological situations, TAF bulletins will only give an indication of the weather at destination. If in doubt as to the suitability of the weather, seek further advice; the GETMET 2003 booklet, produced by the Met Office has details of additional services.

HAZY ABOUT VISIBILITY?

In the prolonged spell of very hazy weather earlier this year, ATC gave me an overhead join to my base airfield. Due to a local procedure, overhead joins are non-standard and include descending over the runway on the runway heading to join the circuit at the turn onto the crosswind leg. At the time, the runway in use had a left hand circuit for fixed wing and the parallel heli-strip (located on the right of the runway) was using a right hand circuit, thus keeping fixed and rotary aircraft separated.

As I was about to commence the turn onto the crosswind leg, I spotted the helicopter that was supposedly joining downwind for the right hand helicopter circuit about a mile away in our 11 o'clock, at the same altitude and heading to pass just behind us - i.e. it was right in the middle of the fixed-wing circuit! If I made the turn, I estimated we would have passed within 300m of each other, so I elected to extend upwind and turn crosswind a short while later.

At the time the sun was in my 5 o'clock, and I estimate that I was 'enjoying' the forecast visibility of 5-7 km, however, I knew that the visibility towards the sun was appalling - in fact the poor visibility was the reason why I was cutting my own flight short. I'd estimate the visibility 'into sun' was probably about 1-2 km - even from only 1500' it was very hard to see any landmarks towards the sun. My suspicion is that the helicopter pilot never saw my aircraft despite strobes, navigation lights and landing lights, and quite possibly they never even knew he had passed through an active fixed-wing circuit.

I considered reporting the incident via radio at the time, but decided that given the poor visibility the helicopter pilot was probably having difficulty locating the airfield - he was heading almost directly into the sun. Only now has it been suggested to me that a CHIRP report would be beneficial to raise awareness that although the forecast visibility may be achieved when looking in one direction, the visibility of both landmarks and other aircraft in another direction may be seriously compromised by the sun's position which may even reduce visibility below VFR minima. Extreme care needs to be taken in such conditions, especially around honey-pots like airfields and navigation beacons.

It should be remembered that the visibility reported by ATC is measured horizontally in all directions by an observer on the ground; the worst direction is that reported.

In conditions of low level haze, the flight visibility, measured forward of an aircraft in flight and the air-ground (slant) visibility may be significantly less than that reported by ATC. Also, the flight visibility into sun, particularly at low sun angles, will often be much reduced. Visual Meteorological Conditions (VMC) are based on the flight visibility that pertains, therefore

possible deteriorations should be considered before undertaking a VFR flight.

The effect of haze on visibility should be covered in basic flight training.

NOT A GOOD EXAMPLE TO SET

I was conducting circuit training with a student in a 3-axis microlight, most of the time with only one other light aircraft in the circuit. I heard a visiting light aircraft call for information, and obtained visual contact with him as he joined crosswind. The aircraft passed behind us, and flew a (relatively tight) number 2 position to us on the downwind. We commenced base and final for a touch-and-go, with the light aircraft calling number 2 after us, and visual contact with our aircraft. We landed approximately 1/3rd of the way into the runway, and immediately applied full power and took off. With minimal rearward visibility in our aircraft I was unable to keep track of the light aircraft behind us.

However, witnesses on the ground (including a number of instructors and tower staff), saw the light aircraft follow us down very close on finals, touch down directly behind us with enough momentum to carry their aircraft into close proximity of our microlight. The witnesses estimate the distance as less than 20 metres, and believe that if I had not taken off when I did, a collision would have been unavoidable. In fact, the FISO on duty in the tower had judged it to be so close that they had decided not to advise the light aircraft to go around, as they believed that would have led to a mid-air collision. It turned out that the light aircraft was on a training cross-country exercise, with both an instructor and his student on board. When asked why he had not gone around, the instructor replied "Oh, you know, time pressures and all that".

I think this incident is worrying for a number of reasons:

First, the instructor allowed any potential time constraints to impinge upon safe flying practice and taught his student, by example, that this kind of flying is acceptable.

Secondly, this highlights a growing need for light aircraft to be aware of microlights slower speeds in the circuit and approach. Our approach speed is in the region of 45kts, so faster aircraft may need to take this into account when positioning in the circuit.

The airfield in this report had an AFIS; thus it was the sole responsibility of the pilot to maintain safe separation. By continuing an approach in the manner described, the instructor set an extremely bad example to the student, and one that could become a 'wrong lesson learned'. Time pressure or pressure of any kind is never justification for eroding safety margins.

EXCESSIVE CAM WEAR

During a routine inspection of the engine (IO-540-C4D5D) on my aircraft the engineer carried out a valve lift check on his own initiative and consequently found that one of the cams had worn extensively (right through the case-hardened layer). Subsequent stripdown revealed that the metal had spread itself throughout the engine, damaging cylinder bores and crankshaft bearings. The estimate was that the engine would have suffered catastrophic failure within 50 hours. The engine had done 1200 hours.

The cause of this situation was typical of privately owned aircraft in that it is only flown about once per week (less in Winter), oil drains away from the camshaft area and hence there is metal-on-metal contact on start-up. Another TB20 at my home airfield has recently been found to have the same problem.

Shortly after this I read that the FAA had received reports of a considerable number of similar incidents on the same engine type at a similar number of hours. I contacted the CAA maintenance section to suggest that a valve lift check should be made a standard part of the Light Aircraft Maintenance Schedule (LAMS). Initially I received no response but, after a little pestering my contact told me that he had not heard of such a thing before and it is not appropriate to apply such a specification to LAMS. Perhaps the CHIRPS panel could debate this and see if something could be done. The check is simple to do and the consequences of non-discovery of the problem are very serious indeed!

CAA (SRG) were aware of this issue. On the subject of possible LAMS amendment, CAA (SRG) emphasised that the LAMS is a standard document for use by all light aircraft and it is not appropriate to amend it for one aircraft/engine type. However, there is nothing to stop an individual owner from specifying additional work/inspections on their aircraft; LAMS is after all the minimum standard to be achieved.

CAA (SRG) is considering strengthening the relevant wording in the Schedule.

FOOTNOTE:

Have you damaged your aircraft in an accident and you are unsure whether it is reportable?

If in doubt contact the Air Accidents Investigation Branch at Farnborough:

Tel: 01252 - 512299 (24-hour)

or

consult the AAIB website: <http://www.aaib.gov.uk>